4. Power Generation, Tranmission and Distribution

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	2002	2003	2004 (estimated)
Total Market Size	1,180	1,670	1,920
Total Local Production	212	334	384
Total Exports	N/A	N/A	N/A
Total Imports	968	1,336	1,536
Imports from the U.S.	55	65	80

Remarks:
* The above statistics are in US $ millions and are unofficial estimates
* Total Market equals Imports Plus Local Production minus Exports

The power sector represents one of the most promising areas for U.S. commercial prospects in Vietnam. While the Government of Vietnam is seeking to encourage foreign investment in this sector, electric power, generation, transmission and distribution remains largely under the control of Electricity of Vietnam (EVN), a state-owned monopoly with 52 subsidiaries, which is in turn overseen by the Ministry of Industry (MoI).

According to MoI, Vietnam's estimated demand for electricity from now to the year 2010 will grow annually at the rate of 12-15 percent. Economic expansion, rising living standards, increasing consumerism, extensive industrialization, and Vietnam's plan to increase the electrification rate in rural areas from the current 77.4 percent to nearly 100 percent by 2010 have fueled this growth.

In 2003, the total power output increased from 35.6 billion kWh (2002) to 41.0 billion kWh, generated primarily by 28 major power plants with a total capacity of 10,800 MW. As of September 2004, 98% of provinces, 94% of communes and 87% of households in the rural areas had access to the national power grid. The total power loss rate in the industry is estimated at 14.2 percent. EVN is striving to improve its efficiency by reducing the total power loss rate to 13 percent in 2005, 10 percent in 2010 and 8 percent in 2020.

In the period 2000-2004, EVN constructed 15 major power plants. A dozen other small and medium-sized hydro power plants were also constructed under various joint venture/joint stock/BOT forms As of end of year 2004, the total designed output capacity of Vietnam's electric power industry reached 11,197 mW, of which 9,868 mW was generated by EVN. Approximately 200,000 km of high and low voltage grids with sub stations of 51.655 MVA were constructed in this period as well. As of November 2004, the electric output supplied for Vietnam's economy was 44 billion kWh, with EVN hoping to generate 53 billion kWh in 2005.

According to the Vietnamese Government's Power Development Master Plan V, to meet the growing demand for power estimated at 49-53 billion kWh in 2005, 89-93 billion kWh in 2010, and 160-220 billion kWh in 2020, an investment of $19-20 billion from 2006-2010 will be needed. Achieving this goal would require development of approximately from 32 to 37 new power generation projects, totaling 12,400 MW in capacity. Including up to 20 hydroelectric

plants with 4,000 MW in generating capacity; eight gas or oil power plants (5.200 MW), and seven coal-fired plants (3,200 MW). Implementation of these projects would also require construction of about 15,000 km of 110 – 500kV transmission lines, together with 300,000 km of low medium and low voltage distribution lines.

While Vietnamese Government plans for developing the power sector are quite ambitious, firms seeking opportunities in this sector should be aware that implementation has lagged on a number of projects. Lengthy delays in tendering and selections procedures for contract awards on a number of projects have frustrated firms seeking opportunities in the power sector.

The primary sources of finance for investment in the power sector are from Official Development Assistance (ODA) grants and loans committed by such international donors as the World Bank (WB), Asian Development Bank (ADB), bilateral funds from various foreign governments, and funds from the Vietnamese Government. Other crucial sources of finance over the next decade include foreign suppliers' credits and EVN's retained earnings. Recently, local commercial banks have been active in providing finance for power generation projects developed by EVN and other state-owned enterprises.

Vietnam's current financial capability only meets 30% of the required total investment capital for the power sector. To attract the necessary capital, the power generation sector will be opened to foreign and domestic investors to develop Independent Power Producers' (IPP) projects under various forms of investment such as Build-Operate-Transfer (BOT), Build-Transfer (BT), Build-Transfer-Operate (BTO), Joint Stock Companies, and Joint Ventures (JVs). IPPs currently generate only about 6.9 percent of total power supply output. The Government has decided to allow up to 35-40 percent of the national total generation capacity to be in the hands of IPPs, among which foreign owned plants are permitted to generate at most 20 percent. This program of liberalization could present significant sales and investment opportunities for U.S. companies. However, implementation of is expected to progress slowly.

Best Products/Services

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The power generation market may be divided into five main segments: (1) project management, consulting and engineering services, (2) installation and construction services, (3) machinery, equipment and materials, (4) supply of equipment, spare parts, materials, consumables, and overhaul and maintenance services (aftermarket), and (5) investment in new IPP power projects in the form of BOT, BT, BTO and JV.

The power transmission and distribution market may be divided into four main areas: (1) project management, consulting, and engineering services, (2) installation and construction services, (3) high, medium, and low voltage electrical equipment for the national grid, and (4) medium and low voltage electrical equipment for industrial, institutional and household users. The national grid is, by far, the largest sector. U.S. firms are most competitive in the following product and service categories:

- Consulting and engineering services for high tension power transmission projects.
- Electrical equipment such as capacitors, circuit switches, switchgears, insulators, etc.
- Electrical protection equipment such as surge arresters, fuse cutouts, circuit breakers, reclosers, etc.
- Electrical testing, calibration equipment, and instruments.
- Pole line hardware for high-tension transmission lines.

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Competition is Vietnam's power sector is fierce, with companies from Japan, Germany, Sweden, Switzerland, China, Russia and Britain among the most active. However, Vietnam favors a diversity of foreign supplier relationships in its approach to working with vendors, thus U.S. firms have a good opportunity to compete for supplier contracts. While the competition from international rivals is strong, American firms are highly respected for their quality and advanced technologies in the power industry. Interested U.S. firms should also contact U.S. government financing and insurance agencies such as Trade Development Agency (TDA), Overseas Private Investment Corporation (OPIC), and Export-Import Bank (EXIM) to enhance their competitiveness.

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The following web sites might be valuable resources of information for U.S. companies interested in exploring business development opportunities in Vietnam's electric power industry.

Electricity of Vietnam Corporation (EVN)
http://www.evn.com.vn

Ministry of Industry (MOI)
http://www.moi.gov.vn